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U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT INVESTIGATIONS

FOREST INSECT CONDITIONS

YOSEMITE NATIONAL PARK

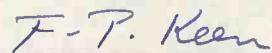
Season of 1947

Submitted by



G. R. Struble, Entomologist

Approved by



F. P. Keen, In Charge

Forest Insect Laboratory
341 Giannini Hall, U. C.
Berkeley 4, California

December 20, 1947

Forest Insect Laboratory
341 Giannini Hall, U. C.
Berkeley 4, California

February 5, 1948

Major O. A. Tomlinson, Regional Director
National Park Service
601 Sheldon Building
San Francisco, California

Dear Major Tomlinson:

I am enclosing two copies, one for your Washington office, of Mr. Struble's report of "Forest Insect Conditions, Yosemite National Park, Season of 1947." An additional copy is being sent directly to the Park Superintendent.

Struble reports that forest insect losses were exceptionally low in Yosemite during the fall of 1947, probably as a result of the Park Service maintenance control program. There were a few local epidemic situations noted, such as at Bridalveil Meadow, Mono Meadow, Illilouette Basin, Empire Meadow and Tenaya Lake.

Continued maintenance control is recommended, with special attention to the Bridalveil and Mono Meadow areas to protect lodgepole stands threatened by mountain pine beetle; and between Mariposa Grove and Hatch Hatchy to protect mixed conifer type from western and mountain pine beetle attacks.

Sincerely yours,

F. P. Keen
Entomologist, In Charge

cc: Park Superintendent
F.C.C.

FOREST INSECT CONDITIONS IN YOSEMITE NATIONAL PARK

Season of 1947

AREAS COVERED

The bark beetle survey of the principal virgin mixed conifer and high elevation pine and fir types within the park was made this year between September 23 and 26. Much the same coverage was given as in previous years, by roadside plots and reconnaissance. Roadside plots in the mixed conifer types between Mariposa Grove and Hetch Hetchy sampled 1,500 acres of representative virgin forest area. Beetle losses in lodgepole pine and Jeffrey pine at higher elevations were obtained primarily as a result of reconnaissance, except in the Bridalveil area. This survey was conducted by the writer, who was assisted by Tommy Tucker of the National Park Service.

CONDITIONS FOUND

1. Mixed conifer type

Generally low endemic infestations were prevalent throughout the mixed conifer timber belt, with infestations confined to single, moderate-sized to large trees, widely dispersed, and occasional groups of smaller trees, principally ponderosa pine. The infestations this year were, in fact, confined principally to ponderosa pine with attacks by the western pine beetle, Dendroctonus brevicomis, Lec., and the California five-spined pine engraver, Ips confusus, Lec. Infestations in sugar pine by the mountain pine beetle, Dendroctonus monticolae, Hopk., were appreciably less than in 1946. Attacks by the fir engraver beetle,

Scolytus ventralis, Lec., in white and red fir were also decidedly less than a year ago. The current low level of losses in this type is believed to be largely the result of annual winter maintenance control work to destroy the overwintering bark beetle populations. Comparative pine losses for the past three years on plots through this type are presented in Table 1.

2. High elevation pine type.

In the higher elevation pine type, principally in lodgepole pine stands, and in some Jeffrey pine, there are localized outbreaks which in some cases appear to be reaching epidemic proportions. The worst conditions found in certain areas of this type are described briefly.

Bridalveil Meadow: Comparative losses for the past 3 years on a 14-acre roadside plot which extends along the old road through the Bridalveil camping area reveal continuing epidemic aggressiveness. These losses are tabulated as follows:

YEAR		KILLED	TREES	
	Number	Volume	Vol.per acre	Remarks
1945	28	1.522	35	Complete Record
1946	40	10.573	240	" "
1947	10	2.732	62	Partial Record (25% complete)

Elsewhere in the Bridalveil Meadow area there are scattered large and small groups of dead and dying lodgepole pines.

Mono Meadow: A noticeable increase in the size of lodgepole pine groups killed in this area was apparent during the fall survey this year. These trees were killed by attacks made in 1946. No check was made in this area on current attacks, but the evidence in the Bridalveil area on current aggressiveness indicates that a similar trend may be expected in the Mono Meadow stands.

Illilouette Basin: The number of Jeffrey pine fades, mainly in the bottom of the main drainage, appeared to have increased in number this year. Red top counts from Sentinel Dome and the upper edges of the basin revealed approximately 40 trees, most of them in the general vicinity of the Mono trail crossing at Illilouette Creek. These trees were killed by the Jeffrey pine beetle, Dendroctonus jeffreyi, Hopk.

Empire Meadow: Aggressive mountain pine beetle killing in the lodgepole pine stands here has been going on for the past several years. An examination this year revealed continued epidemic killing which has accounted for about 60 per cent of the stand. At the present rate of killing, the entire stand in this area will be reduced to a ghost forest within about 2 years.

Tenaya Lake: Second growth lodgepole pines lying between the north end of Tenaya Lake and the gap leading to Tuolumne Meadows were heavily defoliated by the lodgepole pine needleminer, Recurvaria milleri, Busck, during 1946 and 1947. First evidence of this outbreak was reported by the National Park Service early last summer. No bark beetle infestations had subsequently developed in these trees, and because of their youth it is not likely that they will suffer permanent damage.

RECOMMENDATIONS

1. Mixed conifer type.

Winter maintenance control work by felling, peeling, and burning infested trees should be continued. The infested trees to be found this year

TABLE 1. MEASURED PINE LOSSES 1945-1947 IN MIXED CONIFER TYPE
YOSEMITE NATIONAL PARK, CALIFORNIA

Circulation

2 - Tomlinson, NPS RO

1 - Russell, Pk. Sup't.

2 - F.C.C.

1 - GRS

1 - Files

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